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[FAD 16: Foodgrains, Starches and Ready to Eat Foods]

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SPECIFICATION FOR EDIBLE COCONUT FLOUR (SOLVENT EXTRACTED)

UDC 664·761 : 634·616 : 66·061·3

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INDIAN STANDARDS INSTITUTION
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

Indian Standard

SPECIFICATION FOR EDIBLE COCONUT FLOUR (SOLVENT EXTRACTED)

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AMENDMENT NO. 1 APRIL 1979

TO

IS:8676-1977 SPECIFICATION FOR EDIBLE COCONUT FLOUR (SOLVENT EXTRACTED)

Corrigendum

[*Page 5, Table 1, col 3, against Sl No.*(v)] - Substitute '2.0' *for* '20'.

(AFDC 37)

Reprography Unit, ISI, New Delhi

AMENDMENT NO. 2 MARCH 2004
TO
IS 8676 : 1977 SPECIFICATION FOR EDIBLE COCONUT FLOUR (SOLVENT EXTRACTED)

[*Page* 5, *Table* 1, *Sl No.* (vii), *col* 2] — Substitute 'Hexane (food grade), ppm, *Max*' *for* 'Residual solvent, mg/kg, *Max*'.

[*Page* 5, *Table* 1, *Sl No.* (vii), *col* 3] — Substitute '10' *for* '170'.

[*Page* 5, *Table* 1, *Sl No.* (viii), *col* 3 *and* 4] — Substitute '30' *for* '60' in both columns.

[*Page* 6, *Table* 2, *Sl No.* (iii), *col* 2] — Substitute '*Salmonella* bacteria per 25 g' *for* '*Salmonella* bacteria'.

(FAD 16)

Reprography Unit, BIS, New Delhi, India

Indian Standard

SPECIFICATION FOR EDIBLE COCONUT FLOUR (SOLVENT EXTRACTED)

0. FOREWORD

0.1 This Indian Standard was adopted by the Indian Standards Institution on 28 December 1977, after the draft finalized by the Nutrition Sectional Committee had been approved by the Agricultural and Food Products Division Council.

0.2 There is considerable scope for production of an edible flour from coconut kernels or copra for use as a protein supplement in human dietaries. The flour is of good quality and is obtained as a powder which can be used both in blended and processed foods, even though the fibre content is recognized to be fairly high.

0.3 Edible coconut flour has been obtained on an experimental pilot plant scale in the Philippines, the USA and India. India produces large quantities of coconuts, from which an edible flour of good nutritive value can be produced by a suitable solvent-extraction process or by direct wet processing of fresh coconut kernels.

0.4 This standard is based on limited analytical data available from literature sources, and may need modification after actual pilot plant trials or commercial production in the country.

0.5 In the preparation of this standard, due consideration has been given to the provisions of the Solvent Extracted Oil, De-oiled Meal and Edible Flour (Control) Order, 1967; the Prevention of Food Adulteration Act, 1954 and the Rules framed thereunder. However, this standard is subject to the restrictions imposed under these, where applicable.

0.6 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS : 2-1960*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

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*Rules for rounding off numerical values (*revised*).

1. SCOPE

1.1 This standard prescribes the requirements and the methods of sampling and test for edible coconut flour obtained from fresh coconut kernels or dried copra either by expelling (screw-pressing) followed by solvent extraction, or by direct solvent-extraction (dry process) or alternatively by direct wet processing of fresh kernels (wet process).

2. REQUIREMENTS

2.1 Raw Material — The material shall be made either from fresh coconut kernels or dried coconut copra of good quality, free from mould.

2.2 Description — The flour shall be of white to pale brownish-yellow colour, uniform in composition and free from insect, rodent, or fungal infestation, objectionable odour and rancid taste. It shall not contain added flavouring or colouring agents or any other extraneous matter. It shall be free from harmful foreign oilcakes such as castor and *MAHUA* when tested according to the methods prescribed in **11** and **12** respectively of IS : 7874 (Part I)-1975*, as also from neem cake and other foreign materials such as jaggery and molasses.

2.3 The solvents permitted for preparation of edible-grade coconut flour shall be food-grade hexane, or such other solvents as may be prescribed for food-grade use from time to time.

2.4 Particle Size — Unless otherwise specified by the purchaser, the material shall be such that it passes completely through a 250-micron IS Sieve (*see* IS : 460-1962†).

2.5 The material shall be manufactured in premises using equipment maintained under hygienic conditions necessary for food processing units (*see* IS : 2491-1972‡).

2.6 The material shall also comply with the requirements specified in Table 1.

2.7 Microbiological Limits — The edible coconut flour (solvent extracted) shall be tested periodically to comply with the requirements given in Table 2.

3. PACKING AND MARKING

3.1 Packing — The material shall be packed in clean and dry containers made of plywood, suitably and properly lined from inside with polyethylene. Alternatively, polyethylene bags or polyethylene lined jute bags shall be used. Where bags are used, the mouth of these shall be either machined or hand-stitched with at least 14 stitches in each row.

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*Methods of test for animal feeds and feeding stuffs: Part I General methods.

†Specification for test sieves (*revised*).

‡Code for hygienic conditions for food processing units (*first revision*).

TABLE 1 REQUIREMENTS FOR EDIBLE COCONUT FLOUR (SOLVENT EXTRACTED)

(*Clause* 2.6)

Sl No.	Characteristic	Requirement		Method of Test, Ref to Appendix in IS :	
		Dry Process	Wet Process	4684-1975*	4876-1968†
(1)	(2)	(3)	(4)	(5)	(6)
i)	Moisture, percent by mass, *Max*	9·0	5·0	B	—
ii)	Protein (N × 6·25) (on dry basis), percent by mass, *Min*	22·0	17·0	C	—
iii)	Total ash (on dry basis), percent by mass, *Max*	6·0	6·0	D	—
iv)	Acid-insoluble ash (on dry basis), percent by mass, *Max*	0·35	0·35	E	—
v)	Fat (on dry basis), percent by mass, *Max*	2·0	1·0	F	—
vi)	Crude fibre (on dry basis), percent by mass, *Max*	9·0	8·0	H	—
vii)	Residual solvent, mg/kg, *Max*	170	—	—	A
viii)	Aflatoxin, µg/kg, *Max*	60	60	J	—

*Specification for edible groundnut flour (expeller pressed) (*first revision*).

†Specification for edible cottonseed flour (solvent extracted).

3.2 Marking — Each container shall be marked legibly and indelibly with the following information:

a) Name and grade of the material,

b) Name and address of the manufacturer,

c) Batch or code number,

d) Net mass, and

e) Any other details required under Packaged Commodities Regulation, 1975.

TABLE 2 MICROBIOLOGICAL LIMITS FOR EDIBLE COCONUT FLOUR (SOLVENT EXTRACTED)

(*Clause* 2.7)

Sl No.	Characteristic	Requirement	Method of Test, Ref to
(1)	(2)	(3)	(4)
i)	Total bacterial count per g, *Max*	50 000	IS : 5402-1969*
ii)	Coliform bacteria count per g, *Max*	10	IS : 5401-1969†
iii)	*Salmonella* bacteria	Nil	IS : 5887 (Part III)-1976‡

*Method for standard plate count of bacteria in foodstuffs.

†Methods for detection and estimation of coliform bacteria in foodstuffs.

‡Methods for detection of bacteria responsible for food poisoning: Part III Isolation and identification of *Salmonella* and *Shigella* (*first revision*).

3.2.1 Each container may also be marked with the ISI Certification Mark.

NOTE — The use of the ISI Certification Mark is governed by the provisions of the Indian Standards Institution (Certification Marks) Act and the Rules and Regulations made thereunder. The ISI Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well-defined system of inspection, testing and quality control which is devised and supervised by ISI and operated by the producer. ISI marked products are also continuously checked by ISI for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the ISI Certification Mark may be granted to manufacturers or processors, may be obtained from the Indian Standards Institution.

4. SAMPLING

4.1 The method for drawing representative samples of the material and the criteria for conformity shall be as prescribed in IS : 5315-1969*.

5. TESTS

5.1 Tests shall be carried out as prescribed in **2.2**, **2.4**, Tables 1 and 2.

5.2 Quality of Reagents — Unless specified otherwise, pure chemicals and distilled water (*see* IS : 1070-1977†) shall be employed in tests.

NOTE — 'Pure chemicals' shall mean chemicals that do not contain impurities which affect the test results of analysis.

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*Methods of sampling for milled cereals and pulses products.

†Specification for water for general laboratory use (*second revision*).

INTERNATIONAL SYSTEM OF UNITS (SI UNITS)

Base Units

Quantity	*Unit*	*Symbol*
Length	metre	m
Mass	kilogram	kg
Time	second	s
Electric current	ampere	A
Thermodynamic temperature	kelvin	K
Luminous intensity	candela	cd
Amount of substance	mole	mol

Supplementary Units

Quantity	*Unit*	*Symbol*
Plane angle	radian	rad
Solid angle	steradian	sr

Derived Units

Quantity	*Unit*	*Symbol*	*Conversion*
Force	newton	N	1 N = 0·101 972 kgf
Energy	joule	J	1 J = 1 N.m
Power	watt	W	1 W = 1 J/s
Flux	weber	Wb	1 Wb = 1 V.s
Flux density	tesla	T	1 T = 1 Wb/m²
Frequency	hertz	Hz	1 Hz = 1 c/s (s⁻¹)
Electric conductance	siemens	S	1 S = 1 A/V
Pressure, stress	pascal	Pa	1 Pa = 1 N/m²

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